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Pericardial/Myocardial Disease

PROGNOSTIC VALUE OF LATE GADOLINIUM ENHANCEMENT IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

ACC Moderated Poster Contributions
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Background and Objectives: Patients with hypertrophic cardiomyopathy (HCM) represent a heterogeneous group at risk of death and other cardiac events, necessitating further effective risk stratification. Late gadolinium enhancement (LGE) on cardiac MR (CMR) represents fibrosis and has emerged as a possible risk predictor of hard events in several small studies. We sought to evaluate the prognostic utility of LGE in patients with HCM by performing a meta analysis of available studies.

Methods: PubMed, Cochrane Register of Controlled Trials, conference proceedings, and internet-based resources of clinical trials. Studies evaluating the prognostic utility of LGE on CMR (LGE+) with outcomes of interest including death, aborted sudden cardiac death (SCD) were included . We used the risk ratio (RR) with 95% confidence intervals (CIs) as the metric of choice for outcomes. Categorical variables were reported as percentages and continuous variables are presented as means +/- standard deviation. The pooled RR was calculated with the DerSimonian-Laird method for random effects. To assess heterogeneity across trials, we used the Cochran Q via a 2 test based on the pooled RR by Mantel-Haenszel, as well as the I2 statistic.

Results: Four studies between 2008-2010 comprising of 1063 patients without history of septal ablation or myectomy with mean (weighted) age of 51+14, mean LV EF 68% with 68% male subjects formed the study population. There were 634 (59%) patients in LGE+ group and 429 (41%) patients in LGE- group. Mean duration of follow up was 34.5 + 9 months (range 22-43 months). Patients with LGE+ were more symptomatic (NYHA class >3) and more likely to have a lower LV EF. Presence of LGE+ was associated with increased risk of all cause mortality and surrogates of SCD. At follow up, hard events occurred in 71 patients (12%) in the +LGE group and 10 events (2.3%) in the LGE- group translating into a relative risk of 3.61 (1.29, 10.05); p=0.01. There was little heterogeneity with regards to the end point.

Conclusions: Presence of scar as depicted by LGE on CMR is a strong predictor of death and hard clinical endpoints. LGE on CMR may hence be considered a significant variable in the risk prediction equation for patients with HCM.